

No 14

## On Synanche Trachealis

by James Poteread March 14<sup>th</sup> 1817

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## On Larynx, Tracheitis

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I have adopted the term Larynx Tracheitis from among the many synonyms of the disease because it is in general use and appears to me equally proper with any that has been used.

No accurate account of it was published until about the middle of the eighteenth century. It would seem improbable that a disease so strongly marked as Larynx Tracheitis and whose pathognomonic symptoms are so particularly striking should have passed unnoticed by the ancients if it had really existed; and yet when we consider the causes which produce the disease we ought not perhaps to doubt that it had existed in some of those countries in which it is now common many centuries before it was at first noticed in the writings of Physicians.





The first regular account of croup was published about the year 1749, by Martin Ghisi an Italian physician, the laborious works of Michaelis appeared about thirty five years later. Since that time it has been regularly treated of by physicians of considerable eminence.

It appears to be the received opinion that there are two distinct species of the disease: one is termed *Cynanche trachealis spasmodica*, and is supposed to depend solely upon a spasmodic affection of the muscles of the glottis. the other *Cynanche trachealis humida* by Dr Rush, and is attended with inflammation of the trachea and coagulating lymph is sometimes thrown out, which assumes the form of a membrane lining that tube.

If I were guided by my own observation, I should have no hesitation in saying that it was always



in the commencement purely spasmodic. I  
 should be led to this conclusion because all the  
 cases which I have seen in the Southern parts  
 of Virginia, the disease came on suddenly after  
 the child had been in bed a short time, no in-  
 flammation could be perceived upon inspection  
 in the fauces, there was no soreness of the throat  
 or difficulty in deglutition and the disease was  
 generally removed in eight or nine hours and in  
 some instances less than one hour, and without the  
 expectation of any viscous or membranous substance.  
 The disease does not always make its attack when  
 the patient is in bed, for I once knew a boy about  
 sixteen years of age attacked with it while follow-  
 ing his daily employment, he went out to work per-  
 fectly well in the morning, about 11 o'clock he was  
 suddenly taken with difficulty of breathing, with the  
 peculiar sonorous inspiration that attends the disease



which was so sudden and violent in its attack that he fell on the ground and was taken up and carried home, he was relieved by an emetic and the warm bath.

When the disease was not removed by the antispasmodic remedies, it either terminated fatally or was succeeded by the inflammatory or humoral kind. I shall consider the two diseases separately and first, *Trachealis spasm*.

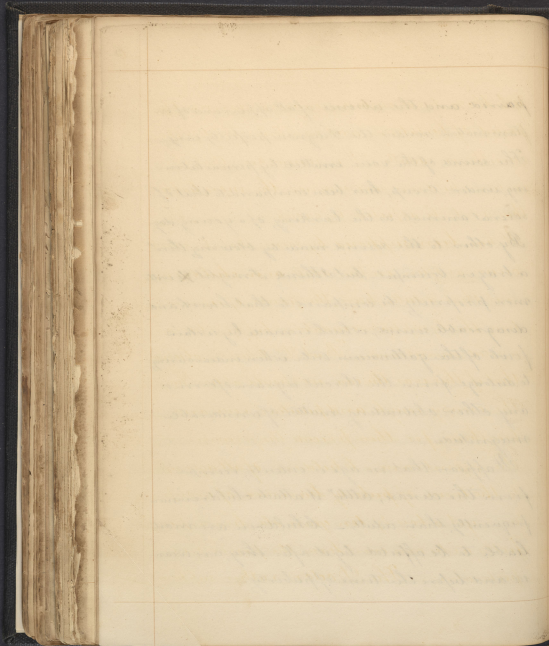
Dr. Cullen classifies it in class Pyrexiae order Phlegmonia and defines it in the following manner. Difficult respiration inspirations loud voice hoarse cough sharp almost no visible swelling in the fauces swallowing not very difficult fever Synechia.

The peculiar sound of the voice, in coughing and in respiration, the great difficulty in breathing while the power of deglutition remains unin-



paired and the absence of all appearance of inflammation render the Diagnosis perfectly easy - The sound of the voice emitted by persons labouring under Croup, has been compared to that of several animals as the barking of a young dog. By others to the sound made by blowing thro' a brazen trumpet - but I think it might ~~be~~ with more propriety be compared to that harsh and disagreeable sound, which is made by certain fowls of the gallinaceous tribe when endeavouring to dislodge from the throat a grain of corn or any other obstructing matter of considerable magnitude.

It appears that no age is entirely exempt from the disease, altho' it attacks children more frequently than adults - Children are most liable to be affected by it after they are weaned and before the time of puberty -





Yet there have instances occurred during the period of lactation, and sometimes the less frequently in adults - It is remarked that the earlier children are weaned the more liable they are to be affected by croup.

"It has been supposed by some that the croup occurs as often in the adult as in children, but that adults have the power of expectorating the lymphatic exudation before it becomes a solid membrane - "But Dr. Cheyne observes" that if this was the case we should at least hear the croupy cough and peculiar voice and breathing, for these precede the formation of the membrane - Children of all ages up to the time of puberty have died of croup and yet a boy of ten years old has as perfectly as he can ever have the power of expectoration - The Doctor rather supposes



its less frequent occurrence in the adult to de-  
 pend on that change which happens in the  
 constitution at puberty, and in a more pecu-  
 liar manner on the change which the upper  
 part of the wind pipe undergoes. The al-  
 teration of the voice from soft & feminine  
 to firm and manly evinces that a material  
 alteration takes place. He therefore supposes  
 that the greater degree of tone with which the  
 trachea is endowed enables it to resist those ex-  
 citements which would have operated on the  
 same organ in a less and less perfect state.  
 No particular climate, season or state of the  
 atmosphere is necessary to its formation al-  
 tho' it occurs more frequently in the tempe-  
 rate climate of Virginia than in the No-  
 thern states, in the changeable weather of  
 spring and autumn rather than in the



Summer and winter months, in a cold moist atmosphere rather than in a dry warm one -

From the observations of medical authors it appears that a low damp atmosphere is peculiarly favourable to the production of the disease - but it not unfrequently occurs in high healthy situations -

It is remarked by Dr Cheyne that it appears most frequently in low situations exposed to air passing over large bodies of water and that it is more especially the disease of seaport towns - We are informed by Dr Crauford that it formerly prevailed much in Scotland in an extensive plain bound by the river Tay, called the <sup>cause</sup> course of Gowrie, but he adds "Hæ planities vix super desiccata sunt, et rarius occurrunt morbus" -

There is no place in the United States better



adapted to the production of croup than  
 Norfolk and Portsmouth, Va. and I may  
 add in which it is more prevalent. I was  
 informed by a physician in Portsmouth  
 that not less than nine cases of croup occurred  
 in that small town in one week during a  
 very wet spell - all of which he says were of  
 the spasmodic kind - he says they were  
 cured by antispasmodic remedies, such as  
 warm bath, the inhalation of the steam  
 of hot vinegar &c. - He says most of his  
 patients were children of a weak and  
 feminine habit of body - which concurs  
 with my own observations, I have seen it at-  
 tack the healthy and robust children but  
 much less frequently than the weak and  
 feminine - the disease generally came on in  
 the night after being exposed to cold and wet feet.





The chief exciting cause of croup is cold applied to the body in some way. It is not improbable says Dr Wilson, that certain states of the alimentary canal may assist in producing croup. Dr Underwood in his treatise on the diseases of children observes that the change from milk to food of harder digestion is probably sometimes cause of croup. Dr Millar ranks, a laxity of the solids, indigestible ingredients in the food and a morbid weakness of the digestive organs, as exciting causes of croup. I shall only mention some of the most striking symptoms. In the course of the night the patient is awakened with a rough and strident cough, so peculiar to the disease, he appears in immediate danger of suffocation and each inspiration is attended with a shrill distress



sing sound. The face is most commonly flushed  
 and sometimes appears livid the pulse is  
 quick and frequent, and great thirst attend-  
 ing. With a continuance and increase of these  
 symptoms the patient is often carried off in a few  
 hours. At other times the disease is often protra-  
 cted to the third or fourth day when this is the  
 case it generally runs into the inflammatory  
 kind. It has been the opinion of some that  
 these two diseases were one and the same dis-  
 ease - Cullen says "though this disease mani-  
 festly consists in an inflammatory affec-  
 tion it does not end either in suppuration  
 or gangrene. The peculiar and troublesome  
 circumstances of the disease seem to consist in  
 a spasm of the muscles of the glottis which  
 induces suffocation and prevents the com-  
 mon consequences of inflammation.

...the first ...  
...the second ...  
...the third ...  
...the fourth ...  
...the fifth ...  
...the sixth ...  
...the seventh ...  
...the eighth ...  
...the ninth ...  
...the tenth ...  
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...the twelfth ...  
...the thirteenth ...  
...the fourteenth ...  
...the fifteenth ...  
...the sixteenth ...  
...the seventeenth ...  
...the eighteenth ...  
...the nineteenth ...  
...the twentieth ...

But dissections have shown that patients have died of this disease where no vestige of inflammation could be perceived, and therefore <sup>upon</sup> what else can the disease depend, than upon a spasmodic contraction of the muscles of the glottis.

From this species generally terminating in the inflammatory kind, and the symptoms accompanying it, some have supposed that these were the forerunners of the inflammatory species, but as instances have occurred in which the patient has died without any inflammatory symptoms, and death taking place so suddenly, and patients being cured merely by inhaling the streams of hot vinegar, leave no doubt in my mind that there are two distinct species of the disease. From the circumstances mentioned there remains no doubt but that the species of the disease is



purely spasmodic and of course our indications of cure would be to relieve spasm.

1 As Bloodletting appears to be a popular remedy in spasmodic affections I should have no hesitations to bleed very copiously even *ad deliquium animi*.

2 Emetics have been found extremely serviceable either in nauseating doses or in such a manner as to excite vomiting they may act locally on the gullet - but as our great object in this case is to overcome the spasm I should give them in small doses so that they might act as relaxants.

3 The warm bath was always much relied on and was always attended with the most beneficial effects. In one case which I witnessed the spasm was entirely removed in fifteen minutes after it was used.





- 4 Inhaling the vapour of warm water or Vine  
gar from the spout of a tea pot has been used  
with the utmost benefit. It is probable many  
cases might be cured by this remedy alone.
  5. An aqueous solution of asafœtida taken by the  
mouth or injected in the rectum has been atten-  
ded with the utmost advantage.
  6. Blisters might be used especially if the dis-  
ease be of long standing.
  7. If the disease proceeded from any disorder of  
the alimentary canal a purgative therewould  
be of the utmost importance.
- The prognosis of any disease is difficult that of  
croup more so. The spasmodic affection at one  
time so violent as to threaten immediate suffo-  
cation may sometimes be relieved in a few mi-  
nutes. We should always doubt the event  
even under the most favourable circumstances.



ces and never cease to hope and use our ut-  
most endeavours, as long as a spark of  
life remains.

### Cynanche, Trachealis Humida

The other species to which Dr Rush gave the  
name, cynanche, Trachealis Humida is known  
by its making its advances gradually and com-  
mencing with pyrexia and catarrhal symptoms  
some days previous to any local affection; by its  
usually coming on in the day time; by being at-  
tended with a mucoous discharge from the trachea  
by not yielding to antispasmodic remedies, and lastly  
by its continuance for several days without in-  
termission or abatement of the symptoms.

When the disease is completely formed the two

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THE THIRD IS THE  
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THE TWELFTH IS THE  
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THE HUNDRETH IS THE

species very near resemble each other, there are however some marks of distinction between them. In the spasmodic kind, there are evident exacerbations and remissions, but there are none in the humid. In the humid, the parts appear somewhat tumid, and a white mucus is seen upon inspiration in the fauces. In some instances, a white membrane of considerable tenacity is found lining the windpipe. It arises says Cheyne, a little under the larynx, and is sometimes prolonged into the division of the Trachea, and generally a quantity of white fluid like matter with which the lungs are filled is seen gurgling up, none of these circumstances occur in the spasmodic species of the disease.

It appears that this species belongs more particularly to the Northern climates. It agrees best with the descriptions given of it by most European writers, and I have been informed by a physician of this



city that he has rarely seen any, but the true inflammatory species. Where as in the Southern parts of Virginia, the spasmodic kind occurs most frequently.

It is also said to attack the most robust and healthy looking children whilst the spasmodic kind affects more frequently the weak and those who have been emaciated by other diseases. Dr Whayne says that this disease is more especially the disease of sea port towns, but it is found to occur almost as frequently in inland situations, as in sea port towns. It very often prevails as an epidemic affecting not only children but adults. Dr Cullen says that he has never seen the disease attack a patient above twelve years old but in the country there <sup>are</sup> innumerable instances of its having attacked adults and put an end to their existence.

If blood be drawn liberally from the commença





ment the relief is often immediate - Very often after it has arrived at its height the sequel appears to be a retrogression of the disease; a perspiration breaks out the fever and cough abate and the disease gradually disappears - When it has continued for several days the child is sometimes relieved by the expectoration of a white viscid substance. Sometimes it assumes a chronic <sup>form</sup> continuing for many days, the patient now and then throwing up portions of membrane.

Various have been the opinions advanced with respect to the formation of this membrane - The first probable opinion suggested on this subject was that proposed by Dr Hume - He believed the first seat of the disease to be in the mucous glands of the trachea, which he supposes are excited to pour out an unusual quantity of mucus. When there happens he observes a very great



secretion of this coagulable fluid from the glands of the trachea in children they are, either not sufficiently attentive or too young, to spit it up. The thinner parts are carried off during expectoration, while the remainder is thickened and compressed by the obstruction which the narrowness of the glottis exposes to the exit of the air from a larger canal. Every circumstance encourages its secretion into a solid firm membrane. This he regards as the proximate cause of the disease, but in my opinion it is only the effect of violent inflammation; that is coagulating lymph is thrown out which becoming inspissated assumes the form of a membrane. If the membrane was formed by a secretion of the mucus glands it ought to be found in the earliest forms of the disease before any swelling took place or before the inflammation had transcended the secretory function of



these glands.

It is the opinion of some that the suffocation and peculiar breathing in this disease depend upon a membrane, in the trachea obstructing the passage of air. but this opinion I believe is wholly unfounded as these symptoms <sup>of</sup> most always occur, and the membrane is rarely to be met with. Then they must depend upon a spasmodic constriction of the muscles of the glottis.

It is asserted that this species is very often partial ly spasmodic. Of course our indications would be not only to remove the inflammation but also to relieve the spasmodic affection.

2<sup>d</sup> Bloodletting should be employed according to the urgency of the case, it has been recommended in some instances to bleed "ad deliquium animi." When the situation of the patient is such as to prohibit the farther use of this remedy from the arm, it would be pro



per to apply eight or ten leeches in the vicinity of the glottis. In some cases of very fat children it is impossible to bleed from the arm, in these cases it would be proper to open the jugular vein.

2<sup>nd</sup> Emetics given in such a manner as to produce vomiting, are essentially useful. Of these the Tartar Emetic is most employed and I may say its virtues excel all others in this disease.

3<sup>rd</sup> The warm bath and the inhalation of the steam of hot vinegar and water ought always to be employed, this alone has been known to stop the progress of croup.

4<sup>th</sup> Purgatives as a part of the general depleting plan should be used according to circumstances.

5<sup>th</sup> The application of blisters and sinapisms to the neck has been recommended, and no doubt from their good effects in similar diseases but what they might be used with success in this.





Calomel has been recommended by some writers in  
 Croup very strenuously, they say it induces a new ac-  
 tion in the trachea this it may do but I should ne-  
 ver employ it before I had used emetics and bloodlet-  
 ting, if these should fail I would then resort to  
 Calomel. Dr. Harrison was a strong advocate  
 for mercury in Croup. He tells us in every instance  
 that he administered it previous to the occurrence  
 of lividness of the face and other mortal symptoms  
 he has completely succeeded in curing the disease.  
 His mode of employing it is after having previous-  
 ly put the child into a tub of water heated to  $96^{\circ}$  or  
 wrapt up in a blanket wrung out of hot water to  
 give it a dose from one to five grains according  
 to the age of the patient every hour until the  
 breathing is evidently relieved, and is to be gra-  
 dually discontinued.

The Polyga Senega is to be given as an expectorant,  
 Polygala



8<sup>th</sup> As a last resort the operation of Tracheotomy is to be performed. Desfaullt suggested the idea of introducing an elastic catheter thro' the nose into the trachea in this disease. If the passage is sufficiently large to admit of its introduction it ought always to precede the operation of Tracheotomy.

